UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/765,444	01/22/2001	Allen Louis Gorin	2000-0109	8988

7590 07/22/2004	EXAMINER	
Samuel H. Dworetsky	LERNER, MARTIN	
AT&T Corp.		
P.O. Box 4110	ART UNIT	PAPER NUMBER
Middletown, NJ 07740-4801	2654	

DATE MAILED: 07/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	09/765,444	GORIN ET AL.
	Examiner	Art Unit
	Martin Lerner	2654

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☐ Responsive to communication(s) filed on _____.

2a) ☐ This action is **FINAL.**   2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1 to 28* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1 to 28* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☒ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All b) ☐ Some * c) ☐ None of:

      1. ☐ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____.

      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date <u>012001, 032003</u>.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The abstract of the disclosure is objected to because it is more than 150 words.

Correction is required. See MPEP § 608.01(b).

2. The disclosure is objected to because of the following informalities:

On page 8, lines 16 to 17 are not a complete grammatical sentence.

On page 10, lines 4 to 5 are not a grammatical clause.

On page 11, line 1, "in-formation" should be –information—.

On page 15, line 22, "in proceeds" should be –and proceeds—.

On page 16, line 12, "for user" should be –the user—.

On page 18, line 5, ", and" should be inserted after "the classifier".

Appropriate correction is required.

Double Patenting

3. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).
   A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

4.   Claims 1 to 28 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1 to 27 of U.S. Patent No. 6,751,591. Although the conflicting claims are not identical, they are not patentably distinct from each other because the corresponding claims set forth the same subject matter. The common subject matter is conducting further dialog with the user if a probability of understanding exceeds a first threshold, routing to a human for assistance if the first threshold is not exceeded, conducting further dialog with the user using a current dialog strategy if a probability of understanding exceeds a second threshold, and conducting further dialog using an adapted dialog strategy if the second threshold is not exceeded. Subject matter of dependent claims of the patent corresponds to subject matter of dependent claims of the current application.

Claim Rejections - 35 USC § 102

5.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

6.   Claims 1 to 11, 14 to 24, and 27 to 28 are rejected under 35 U.S.C. 102(a) as being anticipated by *Marx et al.*

Regarding independent claim 1, *Marx et al.* discloses a method of developing interactive speech applications, comprising:

"determining whether a probability of understanding the user's input communication exceeds a first threshold, wherein if the first threshold is exceeded, further dialog is conducted with the user" – the ItemListModule 520 begins by playing prompt object 521 and receiving the caller's voice response (column 8, lines 58 to 63: Figure 5); if the hypothesis having the highest confidence level has a confidence level ("a probability of understanding the user's input communication") exceeding a predefined threshold, the ItemListModule 520 assumes that hypothesis is the correct match for the caller's response (column 9, lines 18 to 22: Figure 5); if a response is received within the timeout period, a Dialogue Module attempts to confirm that it has correctly recognized the caller's response ("further dialog is conducted with the user") (column 11, lines 30 to 48: Figure 6: Step 630).

Regarding independent claim 15, *Marx et al.* discloses a system for developing interactive speech applications, comprising:

"a dialog manager that output dialog to the user" – the ItemListModule 520 begins by playing prompt object 521 and receiving the caller's voice response (column 8, lines 58 to 63: Figure 5);

"a language understanding monitor that determines whether a probability of understanding the user's input communication exceeds a first threshold, wherein if the first threshold is exceeded, the language understanding monitor prompts the dialog

manager to conduct further dialog with the user" – Dialogue Modules 430 determine

how to handle a dialogue task for a user response, and are "a language understanding

module" (column 6, line 39 to column 7,line 3: Figure 4; column 10, lines 39 to 60); if the

hypothesis having the highest confidence level has a confidence level ("a probability of

understanding the user's input communication") exceeding a predefined threshold, the

ItemListModule 520 assumes that hypothesis is the correct match for the caller's

response (column 9, lines 18 to 22: Figure 5); if a response is received within the

timeout period, a Dialogue Module attempts to confirm that it has correctly recognized

the caller's response ("further dialog is conducted with the user") (column 11, lines 30 to

48: Figure 6: Step 630).

Regarding independent claim 28, *Marx et al.* discloses a system for developing

interactive speech applications, comprising:

"determining whether a probability of understanding the user's input

communication exceeds a first threshold, wherein if the first threshold is exceeded,

further dialog is conducted with the user, otherwise, the user is routed to a human for

assistance" – the ItemListModule 520 begins by playing prompt object 521 and

receiving the caller's voice response (column 8, lines 58 to 63: Figure 5); if the

hypothesis having the highest confidence level has a confidence level ("a probability of

understanding the user's input communication") exceeding a predefined threshold, the

ItemListModule 520 assumes that hypothesis is the correct match for the caller's

response (column 9, lines 18 to 22: Figure 5); if a response is received within the

timeout period, a Dialogue Module attempts to confirm that it has correctly recognized the caller's response ("further dialog is conducted with the user") (column 11, lines 30 to 48: Figure 6: Step 630); the ItemListModule 520 can terminate on an ERROR condition 540 and take appropriate termination actions; in this example a likely action would be to transfer the caller to a live operator ("the user is routed to a human for assistance") (column 9, lines 62 to 65: Figure 5: Step 540);

"determining whether the probability of understanding the user's input communication exceeds a second threshold, the second threshold being greater than the first threshold, wherein if the second threshold is exceeded, further dialog is conducted with the user using a current dialog strategy, otherwise further dialog is conducted with the user using an adapted dialog strategy" – if no correct match hypothesis exceeding a predefined threshold exists, the ItemListModule 520 determines hypotheses having confidence levels falling within a predefined range, indicating possible matches, the ItemListModule 520 sequentially outputs prompts for these hypotheses until a hypothesis is confirmed or the list is exhausted ("further dialog is conducted with the user using a current dialog strategy") (column 9, lines 22 to 29: Figure 5); a Dialogue Module may include an alternative fallback method for performing the dialogue task when it is unable to recognize or is unsure of the caller's response ("further dialog is conducted with the user using an adapted dialog strategy"); examples of such methods are asking the caller to spell his or her response, or to enter the response using the keyboard of a touchtone phone (column 9, line 66 to column 10, line 6); a predefined threshold and a predefined range establish "a first threshold" and "a

second threshold being greater than the first threshold" because, implicitly, the predefined range has a lower limit of the range, which is a first threshold less than the second threshold.

Regarding claims 2 and 16, *Marx et al.* discloses the ItemListModule 520 can terminate on an ERROR condition 540 and take appropriate termination actions; in this example a likely action would be to transfer the caller to a live operator ("the user is routed to a human for assistance") (column 9, lines 62 to 65: Figure 5: Step 540).

Regarding claims 3 and 17, *Marx et al.* discloses if no correct match hypothesis exceeding a predefined threshold exists, the ItemListModule 520 determines hypotheses having confidence levels falling within a predefined range, indicating possible matches, the ItemListModule 520 sequentially outputs prompts for these hypotheses until a hypothesis is confirmed or the list is exhausted ("further dialog is conducted with the user using a current dialog strategy") (column 9, lines 22 to 29: Figure 5); a predefined threshold and a predefined range establish "a first threshold" and "a second threshold being greater than the first threshold" because, implicitly, the predefined range has a lower limit of the range, which is a first threshold less than the second threshold.

Regarding claims 4, 5, 18, and 19, *Marx et al.* discloses a Dialogue Module may include an alternative fallback method for performing the dialogue task when it is unable to recognize or is unsure of the caller's response ("further dialog is conducted with the user using an adapted dialog strategy"); examples of such methods are asking the

caller to spell his or her response, or to enter the response using the keyboard of a touchtone phone (column 9, line 66 to column 10, line 6); prompting the user to enter the response using the keyboard of a touchtone phone is "prompting the user to confirm the recognition and understanding data".

Regarding claims 6 and 20, *Marx et al.* discloses examples of asking the caller to spell his or her response, or to enter the response using the keyboard of a touchtone phone (column 9, line 66 to column 10, line 6); thus, *Marx et al.* discloses both "verbal and nonverbal communications."

Regarding claim 7, *Marx et al.* discloses examples of asking the caller to spell his or her response, or to enter the response using the keyboard of a touchtone phone (column 9, line 66 to column 10, line 6); thus, *Marx et al.* discloses at least "keyboard entries", "keypad entries", and "DTMF codes".

Regarding claims 8 and 21, *Marx et al.* discloses a system and method for developing interactive speech applications for providing information to callers and connecting callers to appropriate people within the telephone system (column 1, lines 15 to 25); caller assistance involves "customer care".

Regarding claims 9 and 22, *Marx et al.* discloses Dialogue Modules 430 determine how to handle a dialogue task for a user response, by determining a confidence level ("the probability") for a hypothesis of the speech input ("the user's input communication") (column 6, line 39 to column 7, line 3: Figure 4; column 9, lines 14 to 29: Figure 5).

Regarding claims 10 and 23, *Marx et al.* discloses Dialogue Modules 430 adjust the semantic, language, and acoustic models used by the Speech Components 440, 450; language adjustments are made to adapt recognition algorithms used by the Recognition Engine using information based on recognition results of prior executions of a Dialogue Module instance; acoustic adjustments can be made at the phoneme level to retrain the statistical acoustic models used by the Recognition Engine to associate specific sounds with the specific phonemes (column 14, line 19 to column 15, line 12: Figure 4); the semantic, language, and acoustic models are "classification models", and are components of "training data stored in a training database".

Regarding claims 11 and 24, *Marx et al.* discloses a Speech Recognition Engine determines a phonetic representation of an input spoken word (column 7, lines 29 to 46); a phonetic representation of an input word is equivalent to "the extracted features".

Regarding claims 14 and 27, *Marx et al.* discloses:

"receiving the user's input communication" – a caller's voice response is received at microphone 316 (column 8, lines 58 to 63: Figures 1 and 5);

"recognizing portions of the user's input communication" – Speech Recognition Engine determines one or more hypotheses for a match and generates a score reflecting a confidence level for each hypothesis (column 11, lines 38 to 43: Figures 5 and 6);

"providing an input to a language understanding monitor based on applying a confidence function to the recognized portions of the user's input communication" – Dialogue Modules 430 ("a language understanding monitor") apply a confidence level

for each hypothesis as received from Speech Recognition Engine to determine how to proceed with a dialog (column 10, line 41 to column 11, line 48: Figure 6).

Claim Rejections - 35 USC § 103

7.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8.   Claims 12, 13, 25, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Marx et al.* in view of *Morin et al.*

Marx et al. discloses Dialogue Modules record information about the execution of the Dialogue Module instance, including occurrences of the various execution steps such as collection, confirmation, and completion of prompts. Recorded information may include additional information such as the recorded waveforms of caller responses. Logged recognition results and stored waveforms permit later analysis and can be used by Dialogue Module instances to improve completion rates by dynamically adjusting the semantic, language and acoustic models. (Column 14, Lines 9 to 34)

The logged results and stored waveforms are similar to a dialog history database, but *Marx et al.* does not expressly disclose a dialog history database including first and second dialog exchanges, each with an automatic dialog output and a user's input communication.

However, *Morin et al.* teaches a related supervised contextual language acquisition system, wherein history handler 62 is responsible for providing the context handler 68 with long-term information on the dialogue, including the last dialogue instructions and input markers. (Column 10, Lines 16 to 25) The dialogue history is used to derive forms of probability levels supplied to uncertainty solver 54. (Column 22, Lines 7 to 13) Uncertainty solver 54 assists the central processor in choosing a correct hypothesis when several candidates for a given input are generated. (Column 10, Line 54 to Column 11, Line 14) The stated advantage is that a dialogue history containing the dialogue exchanges already made permits the system to automatically make use of the immediate context to improve performance. (Column 3, Lines 6 to 25)

It would have been obvious to one having ordinary skill in the art to utilize a dialog history database as taught by *Morin et al.* in the system and method for developing interactive speech applications of *Marx et al.* for the purpose of improving performance by permitting the system to automatically make use of immediate context.

Conclusion

9.   The prior art made of record and not relied upon is considered pertinent to Applicants' disclosure.

Kuhn et al., Stuart et al., Aust et al., and Hon et al. disclose related art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Martin Lerner whose telephone number is (703) 308-
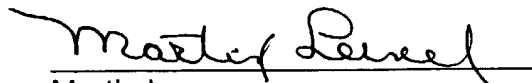
9064. The examiner can normally be reached on 8:30 AM to 6:00 PM Monday to Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richemond Dorvil can be reached on (703) 305-9645. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ML
7/8/04

Martin Lerner
Examiner
Group Art Unit 2654